AD-A066 421 FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO F/G 13/5
TAPERED BOLTS (HIGH PRECISION) DESIGN AND DIMENSIONS.(U)
SEP 78

UNCLASSIFIED FTD-ID(RS)T-1438-78 NL

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FOREIGN TECHNOLOGY DIVISION

TAPERED BOLTS (HIGH PRECISION) DESIGN AND DIMENSIONS

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EDITED TRANSLATION

FTD-ID(RS)T-1438-78 13 September 1978

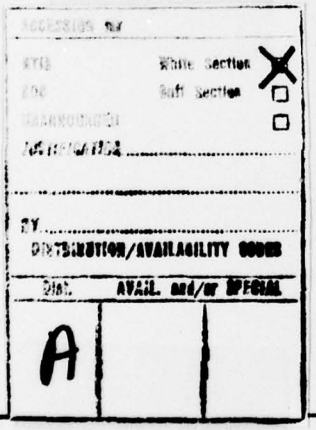
MICROFICHE NR: FTD-78-C-001249

TAPERED BOLTS (HIGH PRECISION) DESIGN AND DIMENSIONS

English pages: 5

Source: GOST 15163-69, pp. 1-6

Country of Origin: USSR
Translated by: Robert D. Hill
Requester: ASD/ENFSS



PREPARED BY:

TRANSLATION DIVISION
FOREIGN TECHNOLOGY DIVISION
WP-AFB, OHIO.

U. S. BOARD ON GEOGRAPHIC NAMES TRANSLITERATION SYSTEM

Block	Italic	Transliteration	Block	Italic	Transliteration
А а	*А а*	A, a	Р р	*Р р*	R, r
Б б	*Б б*	B, b	С с	*С с*	S, s
В в	*В в*	V, v	Т т	*Т т*	T, t
Г г	*Г г*	G, g	У у	*У у*	U, u
Д д	*Д д*	D, d	Ф ф	*Ф ф*	F, f
Е е	*Е е*	Ye, ye; E, e*	Х х	*Х х*	Kh, kh
Ж ж	*Ж ж*	Zh, zh	Ц ц	*Ц ц*	Ts, ts
З з	*З з*	Z, z	Ч ч	*Ч ч*	Ch, ch
И и	*И и*	I, i	Ш ш	*Ш ш*	Sh, sh
Й й	*Й й*	Y, y	Щ щ	*Щ щ*	Shch, shch
К к	*К к*	K, k	Ъ ъ	*Ъ ъ*	"
Л л	*Л л*	L, l	Ы ы	*Ы ы*	Y, y
М м	*М м*	M, m	Ь ь	*Ь ь*	'
Н н	*Н н*	N, n	Э э	*Э э*	E, e
О о	*О о*	O, o	Ю ю	*Ю ю*	Yu, yu
П п	*П п*	P, p	Я я	*Я я*	Ya, ya

*ye initially, after vowels, and after ъ, ь; e elsewhere.
When written as ё in Russian, transliterate as yё or ё.

RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English	Russian	English	Russian	English
sin	sin	sh	sinh	arc sh	$\sinh^{-1}$
cos	cos	ch	cosh	arc ch	$\cosh^{-1}$
tg	tan	th	tanh	arc th	$\tanh^{-1}$
ctg	cot	cth	coth	arc cth	$\coth^{-1}$
sec	sec	sch	sech	arc sch	sech^{-1}
cosec	csc	csch	csch	arc csch	csch^{-1}

Russian	English
rot	curl
lg	log

TAPERED BOLTS (HIGH PRECISION)
DESIGN AND DIMENSIONS

GOST
15163-69
instead of OST 4151

Developed by the All-Union Scientific-Research Institute on Standardization in Machine Building (VNIINMASh)
Director V.R. Verchenko
Chief of Section L.Ya. Itskov
Senior Engineer M.P. Zaroslova

Introduced by the All-Union Scientific-Research Institute on Standardization in Machine Building (VNIINMASh)
Director V.R. Verchenko

Prepared for confirmation by the Administration of General Technology of the Committee of Standards, Measures and Measuring Instruments attached to the Council of Ministers of the USSR
Deputy chief of administration N.N. Inozemtsev
Senior Engineer I.V. Klusova

By the Scientific-Research Department of the General Technical Standards and Fastening Parts of the All-Union Scientific-Research Institute on the Standardization in Machine Building (VNIINMASh)
Chief of Section L.Ya. Itskov
Senior Engineer M.P. Zaroslova

Confirmed by the Committee of Standards, Measures and Measuring Instruments attached to the Council of Ministers of the USSR on 30 October 1969 (proceedings No. 157)

President of the commission A.M. Nikiforenko

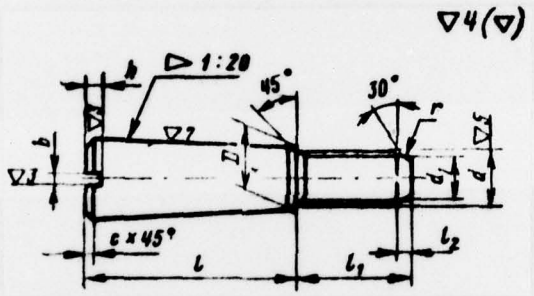
Members of the commission V.N. Shakhurin, L.V. Potemkin, B.N. Lyamin, B.A. Remizov

Put into operation by Decree of the Committee of Standards, Measures and Measuring Instruments attached to the Council of Ministers of the USSR from 30 December 1969, No. 1415

By decree of the Committee of Standards, Measures and Measuring Instruments attached to the Council of Ministers of the USSR from 30 December 1969, No. 1415. Period of introduction is established from July 1, 1971.

Non-observance of the standard is punishable by law

1. The design and dimensions of the bolts must correspond to those indicated on the drawing and in Tables 1 and 2.



Examples of symbols:

bolts with thread diameter d = 12 mm, length of the tapered part l = 60 mm, gradeof strength 5.8, with a large thread pitch of grade of fit 3, without a coating:

Bolt M12X60.58 GOST 15163-69

the same, grade of strength 10.9, with a small thread pitch of grade of fit 2a, with a coating 01:

Bolt M12X1.25.2aX60.109 01 GOST 15163-69

2. Thread - in compliance with GOST 9150-59; tolerences of threads - in compliance with GOST 9253-59: for threads with large pitches of the grade of fit 2 or 3, and with small pitches - 2a

or 3.

3. Dimensions of run-outs and under-cuttings of the thread - in compliance with GOST 10549-63. tches

4. The following are permitted by agreement between the manufacture and user to be manufactured:

bolts with threads in compliance with GOST 10191-62;

bolts with a spherical end (height of the spherical part equal to the magnitude of the bevel edge c);

bolts without a slot.

5. Tolerances for angular dimensions of the tapered part of the bolt - in compliance with the 6th degree of precision GOST 8908-58.

6. The mechanical properties must correspond to grades of strength 5.8-12.9 for bolts from carbon and alloy steels and to groups 23-26 for bolts from stainless and corrosion-resistant steels.

7. Specifications - in compliance with GOST 1759-70.

Table 1

1) мм

2) Номинальный диаметр резьбы d		4	5	6	8	10	12	16
3) Шаг резьбы	Крупный 4)	0,7	0,8	1	1,25	1,5	1,75	2
	Мелкий 5)	—	—	—	1	1,25	1,25	1,5
D	Номин. 6)	5	6	8	10	12	14	20
	Пред. откл. 7)	−0,048		−0,058		−0,070		−0,084

l_1	6) Номин.	12	14	16	18	20	25	30
	7) Пред. откл.	±0,35				±0,40		
d_1	6) Номин.	2,5	3,5	4,5	6,0	7,0	9,0	12,0
	7) Пред. откл.	−0,25	−0,30			−0,36		−0,43
l_2	6) Номин.	1,5		2,0		3,0		4,0
	7) Пред. откл.	+0,40						+0,48
b	6) Номин.	1,0	1,2	1,6	2,0	2,5	3,0	4,0
	7) Пред. откл.	+0,25						+0,30
h	6) Номин.	1,4	1,7	2,0	2,5	3,0	3,5	4,0
	7) Пред. откл.	±0,20					±0,25	
c		0,8	1,0	1,2	1,6			2,0
r		0,3		0,4		0,5	0,6	0,8
8) Предельное смещение оси стержня относительно оси конусной части		0,20		0,25				0,30
9) Предельное смещение оси шлица относительно оси конусной части		0,35		0,45				0,50

KEY to Table 1: 1) mm; 2) Rated diameter of thread d; 3) Thread pitch; 4) Large; 5) Small; 7) Limit deviation [tolerance]; 8) Maximum shift of axis of shank relative to axis of tapered part; 9) Maximum shift of axis of slot relative to axis of tapered part.

Table 2

Dimensions in mm

l		1) Теоретическая масса 1000 шт. болтов в кг при номинальных диаметрах резьбы d						
2) Номин	3) Пред. откл.	4	5	6	8	10	12	16
20	±0,84	4,54	6,80	—	—	—	—	—
(22)		4,97	7,41	—	—	—	—	—
25		5,70	8,36	14,00	—	—	—	—
(28)		6,44	9,35	15,60	—	—	—	—
30		6,95	10,04	16,70	26,50	39,21	56,86	—
(32)	±1,0	7,48	10,74	17,82	28,14	41,47	59,83	—
36		8,37	11,90	19,65	30,77	45,07	64,53	—
40	±1,0	9,75	13,74	22,55	34,99	50,85	72,12	145,8
45		11,32	15,77	25,70	39,51	56,09	80,12	160,3
50		12,99	17,93	29,02	44,22	63,35	88,38	175,7
55	±1,2	14,78	20,22	32,49	49,13	69,94	96,88	191,4
60		16,69	22,64	36,13	54,23	76,75	105,64	207,6
65		18,72	25,21	39,94	59,53	83,79	114,67	224,0
70		—	27,92	43,92	65,03	91,07	123,96	240,8
80		—	—	52,42	76,67	106,34	143,36	275,6
90	±1,4	—	—	—	—	122,60	163,87	311,8
100		—	—	—	—	—	—	349,5

KEY to Table 2: 1) Theoretical weight of 1000 pieces of bolts in kg at rated diameters of the thread d; 2) Rated; 3) Tolerance.

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C591	FSTC	5
C619	MIA REDSTONE	1
D008	NISC	1
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NASA/KSI		1
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E413	ESD	2
	FTD	
	CCN	1
	ASD/FTD/NIIS	3
	NIA/PHS	1
	NIIS	2